

APRIL/MAY 2024

**CSCS33 — DIGITAL LOGIC DESIGN AND
COMPUTER ORGANIZATION**

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Mention the base of Hexadecimal number system.
2. Covert the Octal number 630.4 to Decimal number.
3. Write the representation of a Two-variable K-map.
4. What is BCD Adder?
5. What is multiplexer?
6. What is T Flip-flop?
7. Define the term – Bus.
8. What is Reverse Polish notation?
9. What is DMA?
10. What is Cache memory?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Find the following :
- (i) Binary equivalent of Octal number 26153.7460.
 - (ii) Binary equivalent of Hexadecimal number 2C6B.F2.

Or

- (b) Describe the functions of Digital computer using a block diagram.
12. (a) Express the Boolean function $F = A + B'C$ in a Sum of Minterms and discuss.

Or

- (b) Simplify the Boolean function $F(x, y, z) = \sum(2, 3, 4, 5)$ using K-Map.
13. (a) Discuss the functions of RS and JK Flip-flops.

Or

- (b) Explain the working of Synchronous Counters.
14. (a) Describe the two types of Stack organization in CPU.

Or

- (b) Discuss on different types of Addressing modes.

15. (a) Explain the characteristics of Peripheral devices.

Or

- (b) Describe the functions of Main memory.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the functions of Digital Logic gates.
17. Explain Half-adder and Full-adder with its truth tables.
18. Discuss on the functioning of Shift registers.
19. Explain the different types of Instruction Formats.
20. Describe the Asynchronous Data transfer method in detail.